THEME: Low Carbon Industry Transition

Date: 12 February 2021 **| Time:** 1.45 – 3.30 pm (IST)

To tackle the increasing challenge of climate change it is important for energy and industrial systems to achieve deep decarbonisation by around 2050.

Supporting low carbon industry transition is a priority for the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India and for the Indian industry itself. This led to India playing a key role in the Industry Transition Track at the UN Secretary-General's Climate Action Summit in 2019, where the 'Leadership Group for Industry Transition' (LeadIT) was initiated by India and Sweden to drive global transformation in hard-to-decarbonize and energy-intensive sectors. Other members of the group include Argentina, Finland, France, Germany, Ireland, Luxembourg, the Netherlands, the Republic of Korea and the UK, and a group of companies, including Dalmia Cement, DSM, Heathrow Airport, LKAB, Mahindra Group, Royal Schiphol Group, Scania, SpiceJet, SSAB, ThyssenKrupp and Vattenfall. Supported by the World Economic Forum (WEF), the Energy Transitions Commission, Mission Innovation, Stockholm Environment Institute (SEI) and the European Climate Foundation, among other partners. The Group is engaged in an ambitious, public-private effort to ensure that heavy industries and mobility companies "can find a workable pathway to deliver" on the Paris Agreement on climate change1. SEI is the Secretariat of LeadIT www.industrytransition.org

For India, the industry sector must play a central role in a long-term low carbon strategy. The Government's vision to achieve a $5 trillion economy by 2024 entails investments in several sectors, more noticeably in industry sub-sectors like steel and cement that are vital for flagship initiatives that focuses on infrastructure development, 100% electrification, piped water for all, etc. The analysis by TERI shows the crude steel capacity in the country will increase from a current level of 142 million tonnes per annum (MTPA) to 245 MTPA by 2030 and 528 MTPA by 2050 to meet the need of India's growing urban infrastructure and manufacturing sector. Similarly, for cement, demand is expected to increase three-fold by 2040, driven by infrastructure requirements. However, this growth will have significant energy, environmental, resource and economic consequences. It is, therefore, vital to discuss the pathways to decarbonize these sectors to ensure that India stays on track to meet its emissions targets whilst ensuring economic growth.

Being a country having low coking coal resources, the steel manufacturing has focused on developing and adopting technologies that are based on non-coking coal and domestically available resources. To improve the technological face of the existing steel manufacturing plants and to sustain the projected high growth rate, there is a massive need for concerted technology development. The breakthrough steel manufacturing technologies are expected to be technically and commercially competitive by 2040 or

[1] https://sdg.iisd.org/news/leadership-group-to-drive-industry-transition-to-low-carbon-economy/

earlier, depending upon price of hydrogen. This applies to hydrogen-based steel manufacture, whose deployment in India could be part of the broader development of the hydrogen economy in India.

The cement industry in India is already among the most energy efficient in the world, with relatively large production units using latest technologies. The industry uses a relatively high portion of fly ash and blast furnace slag as a substitute for energy-intensive clinker production. Unlike steel, the decarbonisation of cement sector poses one of the most difficult challenges in the shift to a low-carbon economy, as process emissions are particularly difficult to avoid.

Globally, several routes to decarbonisation are being considered in harder-to-abate industry sectors, including Carbon Capture Use and Storage (CCUS), use of hydrogen as a heat source or a reduction agent, electrification, use of biomass as an energy source, material circularity amongst others. The potential pathway will vary across industries, and most new technologies are at an early stage of development. It is necessary to discuss the possible way forward in terms of resource utilization, investments, and how policy should be shaped to take this forward.

This track on industry decarbonisation at the WSDS 2021 will discuss the role of industry transition in achieving the goals of the Paris Agreement with a focus on the Indian steel and cement sectors. After an opening session setting out the general context and the different initiatives, this session will also focus on support required to decarbonize these harder-to-abate sectors.

Questions for speakers

1. What potential routes are being explored by the industry to reduce carbon emissions by your respective sector and move towards net-zero by around 2050?

2. What are the challenges you foresee in this journey?

3. What role you envisage for international cooperation especially with EU and various member states in this regard?

4. What domestic policies would be needed to accelerate industry decarbonisation?
